I claim:

1. A method of fixing a tool in a clamping chuck, which comprises:

determining an actual position of the tool along an insertion direction;

inserting the tool into the clamping chuck along the insertion direction, based on the actual position, until a desired position is reached; and

fixing the tool in the desired position in the clamping chuck.

2. The method according to claim 1, wherein the tool is a shank-type tool.

3. The method according to claim 1, wherein the insertion direction is defined along a longitudinal axis of the tool.

4. The method according to claim 1, which comprises determining the actual position before and/or during the step of inserting the tool into the clamping chuck.

5. The method according to claim 1, which comprises heating the clamping chuck for receiving the tool and cooling the

clamping chuck after the desired position of the tool has been reached for fixing the tool.

6. The method according to claim 1, which comprises determining an actual position of a tool cutting edge of the tool.

7. The method according to claim 1, which comprises determining an actual position of a tool tip of the tool.

8. The method according to claim 1, which comprises defining the desired position with regard to a reference position on the clamping chuck.

9. The method according to claim 8, which comprises determining at least one of the actual position, the desired position, and the reference position in a non-contact manner.

10. The method according to claim 9, which comprises determining the respective positions with a measuring configuration having an optical system.

11. The method according to claim 10, which comprises repeatedly checking at least one of the actual position, the desired position, and the reference position in a non-contact manner.

12. The method according to claim 1, which comprises rotating at least one of the tool and the clamping chuck about a rotational axis during the step of inserting the tool into the clamping chuck.

13. The method according to claim 12, which comprises rotating the tool and the clamping chuck about a common rotational axis.

14. The method according to claim 2, which comprises subsequently unshrinking the tool from the clamping chuck.

15. The method according to claim 1, which comprises holding the tool outside the clamping chuck for the step of determining the actual position and subsequently inserting the tool into the clamping chuck until the desired position is reached.

16. The method according to claim 1, which comprises permanently or temporarily measuring the actual position of the tool during the inserting step along the insertion direction and inserting the tool on a basis of the measured actual position.

17. An apparatus for fixing at least one tool in a clamping chuck, the apparatus comprising:

a device for inserting the tool into the clamping chuck;

a configuration for determining an actual position of the tool before and/or during an insertion of the tool into the clamping chuck; and

a positioning device for positioning the tool in the clamping chuck utilizing information obtained with regard to the actual position of the tool for setting a desired position of the tool inside the clamping chuck.

18 The apparatus according to claim 17, which further comprises a heater for heating the clamping chuck for receiving the tool.

19. The apparatus according to claim 17, which further comprises a position monitoring system for non-contact determination or checking of at least one of the actual position, the desired position, and a reference position on the clamping chuck, wherein the desired position of the tool is defined relative to the reference position.

20. The apparatus according to claim 17, which comprises a device for rotating at least one of the clamping chuck and the tool about a common rotational axis.